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Future Trends in Apprenticeship Training: Implications

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Introduction

1. Good afternoon fellow conference delegates. I would like to start my presentation this afternoon by extending greetings from the Province of Alberta, the Department of Career Development and Employment, the Alberta Apprenticeship and Trade Certification Board and staff of the Department who are involved in administering apprenticeship training programs in Alberta. I would also like to offer best wishes to the conference on behalf of the Canadian Council of Directors of Apprenticeship.

2. I further wish to extend my compliments to our conference host, the Nova Scotia Department of Advanced Education and Job Training, and the organizers of "Focus on Life Long Learning". I wish to express my appreciation to them for the opportunity to participate by speaking to you about the trends which I believe will significantly impact apprenticeship and other forms of industrial and occupational training both now and in the future.

3. I will approach this topic by examining, from a macro-perspective, those economic and social trends which seem to be shaping future occupational training requirements, and by implication, will impact on all of us involved in this enterprise. I will then focus my topic more specifically on the implications which I feel those trends will have on apprenticeship training systems generally. In this context I will be examining developments that are influencing apprenticeship training systems across Canada, and how these systems are responding to the pressures of social and economic change. I will be concluding my presentation by identifying some specific initiatives and innovative delivery approaches that are designed to meet emerging occupational training needs.

4. To this end I have identified four objectives for this presentation. They are:

    1. to identify some of the social and economic trends which are impacting occupational training;
    2. to identify implications of these changes for those involved in occupational training including educators, industry, and governments;
    3. to describe how the apprenticeship training system, in Alberta specifically, has evolved in response to industrial restructuring and demographic changes; and
    4. to describe innovative approaches to the delivery of apprenticeship technical training designed to meet emerging occupational training needs.

Before I proceed, there are a couple of points I wanted to mention about the material I will be covering:

- first, because of the availability of current statistics from the Labour Market Research Division of our Department, some of the data I will present relates specifically to Alberta. I consider this useful to the extent that this comprehensive data can be used to effectively illustrate trends occuring at a national level as well as in Alberta; and

- second, a full transcript of this presentation, including a bibliography, will be available upon request. If you wish to have a copy please leave me your business card, or your name and mailing address on a slip of paper at the end of the session.

Social and Economic Trends

5. The world we live in, as we are well aware, is becoming increasingly dynamic. Social and economic trends are effecting change which is pervading every facet of life at a much more pronounced rate than ever before. In terms of the labour market, there are many forces at work which will change its nature in the decades ahead. Basically, their are five distinct trends which are having a profound effect on the labour market and are worth examining for the purpose of our discussion today. These are:

   1. a shift from a goods producing to a service producing economy;
   2. globalization of the economy;
   3. the rapid introduction of new technologies;
   4. an aging population and workforce; and
   5. an increasing public awareness and concern over environmental issues.

Taking each trend in turn:

The Shift From a Goods Producing to a ServiceProducing Economy

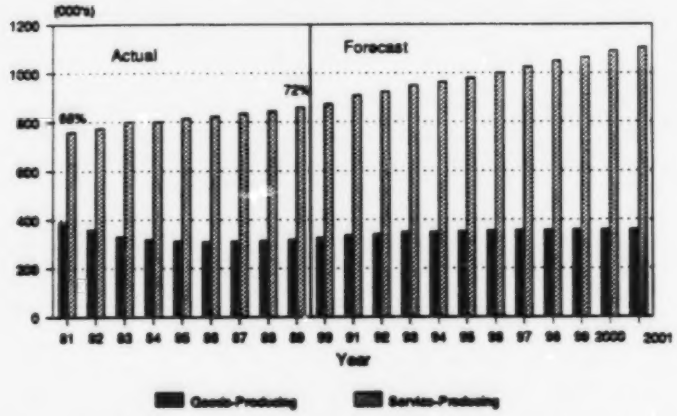
6. The Economic Counsel of Canada (1989) has pointed out that "All industrialized countries have experienced a shift in employment from goods-producing industries to service producing industries...The extent of the shift differs from country to country..."

7. The extent to which this shift has taken place in Alberta is illustrated in chart #1, prepared by our Labour Market Research Division. The chart clearly indicates a trend towards an increased proportion of the Alberta population who are employed in the service sector of the economy. Please note that:

   1. in Alberta in 1981, 66% of the population worked in service producing industries;
   2. by 1989 this had increased to 72%; and
   3. the trend towards increased growth of the service sector is expected to continue past the year 2000.

Chart #1

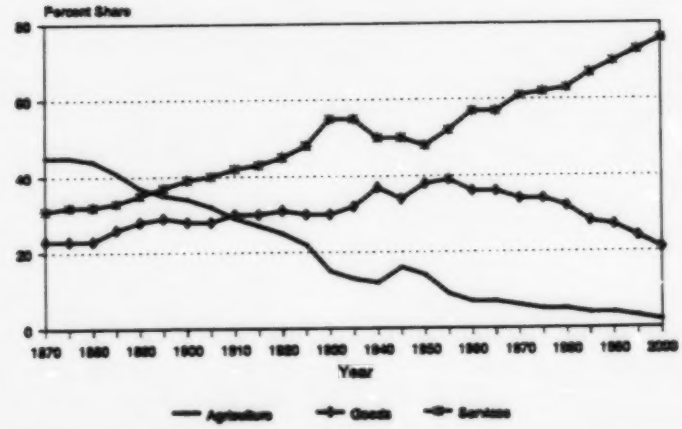
Employment Forecast by Economic Sector



8. According to Statistics Canada, the service sector as a whole in Canada, accounts for a similar proportion of the nations total employment (70.4%) and in 1986 represented 64.3% of the Gross Domestic Product (G.D.P.). Chart #2, taken from John Kettle's Future Letter, illustrates the pattern of economic shifts as measured in GDP by showing the relative decline in national output of the Goods, and Agriculture producing sectors of the Canadian economy.

Chart #2

SHARES OF NATIONAL OUTPUT 1870-2000
Gross Domestic Product



Source: John Kettle's Future Letter

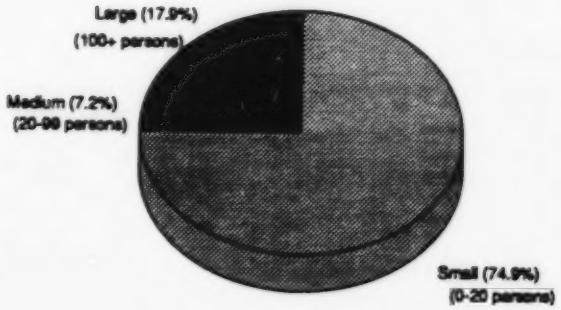
9. This trend from goods production to service production is probably one of the most important factors shaping the economy of tomorrow. The growth in the service sector will impact the workforce in several ways; not the least of which will be a significant change in the nature of jobs and the conditions of employment for many workers. Service related jobs generally comprise more part-time work, split shifts, irregular working hours, and in some cases lower levels of income.

10. Another important aspect of the service economy is the number of small firms which comprise this industrial sector. A federal document titled "Workforce 2000: The Canadian Scenario" (1988) reported that "Most employment growth in recent years has been in small firms". Chart #3, taken from this document, illustrates that between 1978 and 1985:

    1. 74.9% of net employment growth was in small firms - those with fewer than 20 employees;
    2. 7.2% was in medium sized firms - that is 20-99 employees; and
    3. 17.9% was in large firms those with more than 100 employees.

Chart #3

Employment and Business Dynamics
1978 to 1987



Share of Net Employment Growth

Source: Statistics Canada

11. Small firm dynamics have a number of implications for skill development in the labour force. These include:

    1. *the rate of failure of new firms is very high during the first 5 years of operation* (some estimates place this figure at over 50%). This implies that the labour market will continue to be very dynamic with individuals frequently changing jobs and requiring continuous training and retraining;

2. *many small firms are undercapitalized and find it difficult to afford training.* A recent survey by Employment and Immigration Canada (1987), indicated that these firms are much less likely to train than larger firms;

3. *small firms, in general, are slower to adopt new technologies than are large ones.* However, if we are to maintain our standard of living in an ever more globalized economy, small firms will need to increase their productivity. This implies that future trends will be towards more intensive technological and associated skill development among small firms.

12. From these examples we can see that the trend towards a more service oriented economy has implication for the training and retraining of workers and the continuous development of new occupational skills. Training and retraining then are becoming an increasingly important component of the economy. The trend towards increased growth in the service sector and the need to "focus on lifelong learning" is a reality which must be accepted and given serious consideration by all those involved in the development of occupational training strategies.

Globalization of the Economy

13. A few moments ago I referred to the relationships between a globalized economy, productivity, and our standard of living. I would like to take a few minutes to clarify and expand on this theme.

14. The trend towards globalization of economies is well documented in numerous publications including the federal government's Workforce 2000 publications. The establishment of organizations such as the Organization for Economic Cooperation and Development (O.E.C.D), has served to increasingly harmonize the economic policies of major industrial countries and to increase the access to, and volume of, trade on international markets. The increasing number of international trade agreements are a significant expression of the continuation of this trend.

15. The major implication of this globalization trend will be the increased competition for Canadian companies and industries in both domestic and export markets. The question of "economic fitness" then becomes an increasingly important issue for all of us. How fit are we to compete on international markets? Are there ways to improve our fitness, hence our place with the competitors in the international arena?

16. In 1986 the "European Management Forum" conducted a survey which ranked Canada (using selected economic criteria) on our competitiveness with 22 other OECD countries. Here is how we ranked:

1. We are 7th on the extent to which our educational and training institutions adequately prepare executives for needs of business;
2. Our top management are 8th in computer literacy;
3. We are 10th in managerial drive and entrepreneurship;
4. Our vocational training was judged to be ranked 13th in its adequacy for meeting the requirements of a competitive economy; and
5. We are judged 15th on the availability of skilled labour.

17. It is because of indicators such as these, that economists predict that Canada's share of world manufacturing is likely to continue to decrease . If Canada wishes to compete we need to become more productive. I believe we should heed the words of journalist, Ron Chalmers, who recently stated in the Edmonton Journal (Nov. 18, 1989), that:

> "Mere crumbs will fall to nations that resist change and thereby condemn their workers to compete against others that use advanced technology to boost production and wages".

18. If we allow our productivity to stagnate, we will lose markets to more efficient countries. Countries, that are able to boost their productivity by developing increasingly sophisticated technologies and related skills, will increase their market share. In the future we will see a democratized eastern Europe modernize their modes of production and become increasingly more competitive, taking their place as significant competitors in the world marketplace. Additionally, the development of trading blocs, such as the European Economic Council (EEC) will facilitate technology transfers and further speed up these modernization processes.

19. The implication for Canadians of these trends towards globalized economies is fairly self evident. Workers, businesses, educators and all levels of government must urgently assume their common respo..sibilities in developing the increasingly sophisticated skills required for enhanced competitiveness. For individuals, this means becoming better educated and better trained - quickly; for industry this means staying on the leading edge of new technology; and this leads me to the third significant trend which I would now like to touch on.

The Rapid Introduction of New Technology

20. Since the onset of the industrial revolution technology has played a powerful role in reshaping and expanding the world's economy. Today new technology is being introduced at an accelerated pace.

The Econonmic Council of Canada recently completed a study which determined the rate at which select technologies were adopted in a five year period between 1985 and 1990. The results of the study showed that:

1. The largest percentage increase occurred in the use of robotics by 270%;
2. Use of automated inspection and quality control equipment increased by 263%;
3. Computer assisted drafting (C.A.D.) increased by 219%;
4. The number of people using personal computers increased by 190% ; and
5. The number of people using word processors increased by 63%.

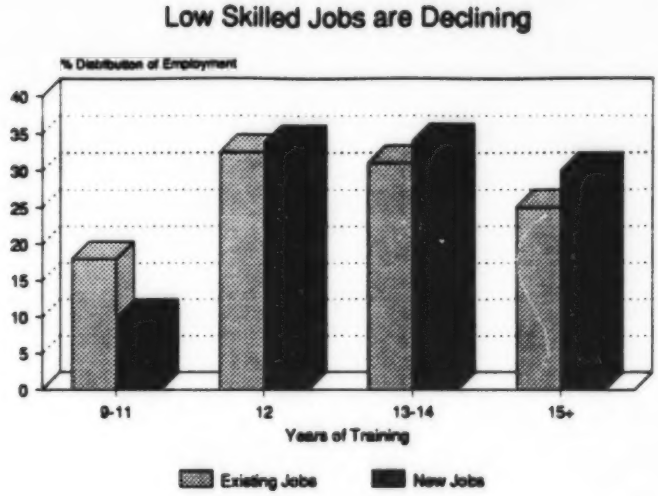
21. In light of global pressures to increase our efficiency and productivity, increasingly rapid technological change is clearly a trend which will continue in the foreseeable future. This phenomena will introduce change into every job and every industrial sector. Technological innovation will require that workers not only develop more sophisticated and highly technical skills, but also be more adaptable to constant change.

22. This revolution of rising educational requirements has been commented on by many labour market analysts. For example, the Economic Council of Canada recently noted that:

> "More and more Canadians must be willing to retrain and reschool at various times. Continuous learning has become more than a buzzword. Not only is technological change heightening the imperative for skills development by eliminating old jobs and creating new ones; but it is also reducing the employment available for those without advanced skill levels"

23. Chart #4, published in the Workforce 2000: The Canadian Scenario paper (1988), clearly illustrates a trend towards higher educational requirements for the jobs of tomorrow by comparing the number of years of training required to fill new jobs with the amount of training workers have in existing jobs. According to this data approximately 62% of new jobs created in industry already requires some form of post-secondary training. In Alberta, it is estimated that by the year 2000, 73% of all jobs will require post-secondary education.

Chart #4



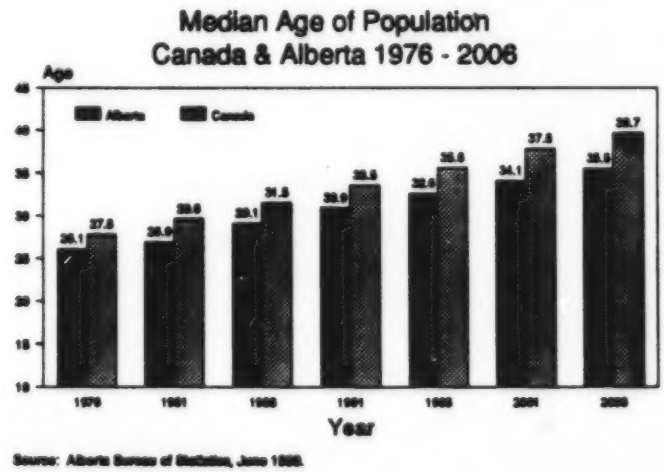
24. The evidence is overwhelming that technological innovation and the associated phenomena of rising educational and training requirements, is a trend which will significantly impact the labour market in the future.

An Aging Population and Workforce

25. In addition to the economic factors which I have mentioned there are distinct demographic and social trends which will have labour market implications. The most significant of these is the aging trend of the population in general and the workforce specifically.

26. The average age of Canadians is rising and will continue to rise in the decades ahead. Chart #5 illustrates this trend by projecting the median or middle age, of both Canadian's and Albertan's, up to the year 2006, when it is expected to be approximately 40; an increase of 12 years over a 30 year span: You will notice that the trend in Alberta parallels the Canadian trend.

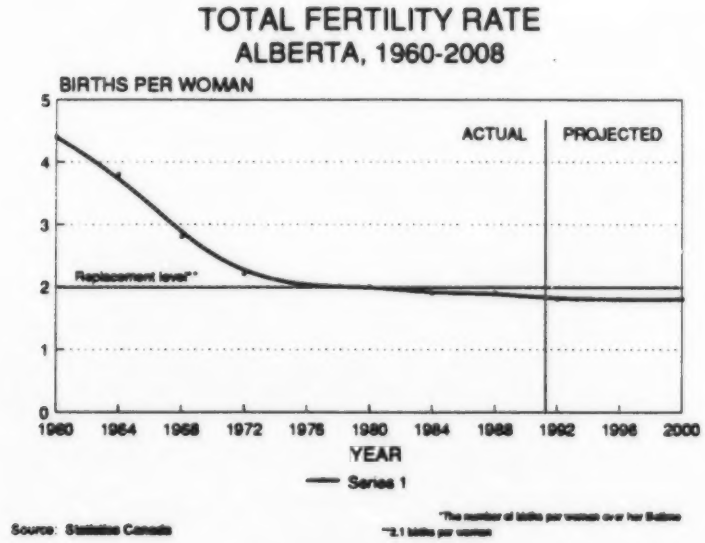
Chart #5



Source: Alberta Bureau of Statistics, June 1988.

27. These trends are the result of a declining fertility rates. This next chart shows how the fertility rate in Alberta (which runs parallel to the national fertility rate), has fallen below replacement levels and is expected to remain there over the foreseeable future. These projections indicate a long-term trend towards declining population growth and a subsequent aging trend of the general population.

Chart #6



28. The traditional supply of labour which many companies have relied upon in the past is rapidly dwindling. This is making it necessary for employers to turn more and more often to non-traditional sources of labour for the skills they require. At the same time the tight supply of labour will present increasing employment opportunities for groups traditionally under represented in the work force such as women , natives and persons with disabilites.

29. In response to the declining birth rate and slowdown in the rate of population growth, the federal government has also been increasing immigration to alleviate our anticipated labour and skill shortages. This will have implications since many immigrants lack a working knowledge of English, and some experience difficulties in having their qualifications, education, and experience assessed and recognized in relation to our standards. With increasing levels of immigration, this issue will become more and more significant.

Increasing Concern Over Environmental Issues

30. Another major trend which is beginning to impact upon economic development is the increasing public awareness and concern over environmental issues.

31. This is developing and growing on a world-wide basis. Recognition of potentially negative environmental effects of industrial development on human life, and the environment that sustains it, is of paramount importance to peoples around the world. The future development of large-scale resource extraction and processing projects such as oil extraction and forestry will be subjected to increasing environmental scrutiny by the public and government agencies. What will be an acceptable balance between economic development and the environment? What are the trade offs?

32. These growing concerns may effect the rate of growth in some of our industries but will at the same time provide the challenge to develop new environmental protection technologies. This opportunity will call for highly educated and skilled workers in many technical and scientific disciplines to both develop and maintain more technically sophisticated and environmentally friendly industrial processes.

Implications

33. I have reviewed these economic and social trends to provide you with a perspective on the forces which will be creating a large part of the forthcoming pressures on occupationally oriented education and training. At this time I would like to identify what I see as the direct implications of these trends for apprenticeship, or apprenticeship-like occupational training.

34. Structural shifts in the economy and a rapid growth in the service sector will require our training systems to adjust increasingly quickly to a variety of industry based training needs. Not only will we need to respond more quickly; we will need to do so for a broader spectrum of occupations and industries. These industries will typically function in the service sector and be comprised of small employers working in new and emerging fields which are often characterized by a high degree of specialization and rapid innovation. Success or failure, for many of these employers, will ultimately depend on their ability to access relevant and appropriate training. Is apprenticeship a

viable mode of training for meeting these kinds of training needs? What adjustments could be made to our existing apprenticeship systems to make them more responsive?

35. Globalization of the economy means that not only our industries but also our educational and training systems are in competition with other countries. Our success in this arena is reflected largely in the efficiency and productivity levels achieved by those industries in which well educated and highly skilled workers provide their employers with a competitive advantage. A survey which I mentioned earlier has ranked Canada 13th out of 22 countries on the adequacy of its vocational training for meeting requirements of a competitive economy. This implies there is much room for improvement, and I don't believe that simply increasing expenditures is the answer. In fact there are several surveys which show that our national expenditures on education and training, as a percentage of our Gross Domestic Product (GDP) is one of the highest in the world among industrialized nations. What can we do to make our vocational training systems more efficient and effective? Could apprenticeship or apprenticeship-like training achieve these goals?

36. The trend towards increasingly rapid technological innovation will clearly impact on all of us who are in the business of developing and delivering vocational education and training programs. Industry will need to become more directly involved in the design, development and delivery of these programs. Government, employers and educators will need to commit resources necessary to enhance or build training infrastructures which create strong cooperative linkages between the training institutions and those who are on the leading edge of these innovations. Can the apprenticeship training system be used as a model for building these linkages?

37. In the area of vocational training generally there will be an increasing demand for a higher level of basic skills such as reading, writing and math. These base skills will be necessary prerequisites for students who are expected to adapt to the constant change brought about by technological innovation. Put simply, workers will need the ability to learn at a faster pace. In what way can we promote the development of these basic skills?

38. In the areas of industry-oriented and trades training, the advent of rapid technological change is rendering the skills and previous training of many technicians and tradespeople redundant. For example, the impact of micro-electronics and computer technology in the automotive trade has so effected skill requirements, that continuous updating and training is now required to maintain ones

employment in this trade. How will apprenticeship systems across Canada respond to the retraining of workers to meet rapidly changing needs?

39. The demographic trends which we discussed earlier will significantly impact the workforce and by implication effect our training programs. An aging population; a higher rate of worker displacement, due to economic shifts and technological innovation; and more people re-entering the workforce from retirement, means that older people will make career changes more frequently and require retraining more often. For these workers, long periods of absence from the workforce, required by traditional training programs, may not be a viable alternative; but, apprenticeship-like, joint institutional and on-the-job training for some occupations may be.

40. How will the various apprenticeship jurisdictions across Canada respond to the issue of geographic mobility? Regional labour shortages will seriously hamper economic development without increased worker mobility across provincial and national boundaries. With increased immigration and provincial migration comes the need for governments, industry and training establishments to articulate training standards across these boundaries, and to develop accreditation arrangements. Put simply, we need greater provincial and national mobility in the workforce.

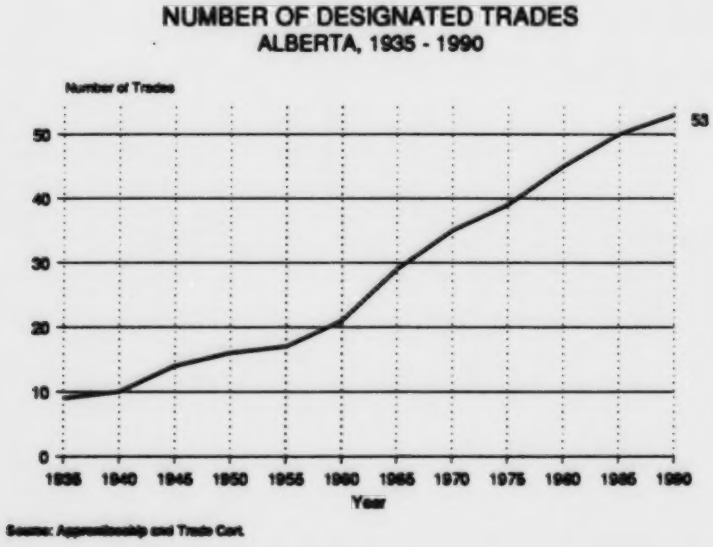
41. A recent task force established by the Canadian Labour Market Productivity Center, strongly supported the need to "strengthen national standards...to ensure that the skills an individual obtains are transferable and portable". To facilitate standardization of programs across Canada the task force has recommended establishment of a National Apprenticeship Board and a supporting network of National Trade Advisory Committees. If implemented this Board and committees would link established apprenticeship training systems accross the country. How this would operate remains to be seen!

42. Even with greater workforce mobility, employers will find themselves needing to turn to non-traditional sources of labour more and more frequently . It is therefore imperative that we evaluate our programs and delivery systems continuously to ensure responsiveness to the needs of these minority groups. Although we have examined our respective systems, are there still barriers which may be limiting the access for natives, women, immigrants and those with disabilities to apprenticeship training?

How is Alberta's Apprenticeship System Responding to These Issues?

43. For over four decades apprenticeship has been at the center of industrial training in Alberta. Chart #7 illustrates how the system of training has grown and expanded since 1935 to the point where today, training and certification programs are available in 53 designated trades. Close to 22,000 apprentices are currently registered in training programs for which the technical training is being delivered through 15 training institutions. This system is supported by over 14,000 employers who, through their representatives, participate directly in the development and delivery of these programs.

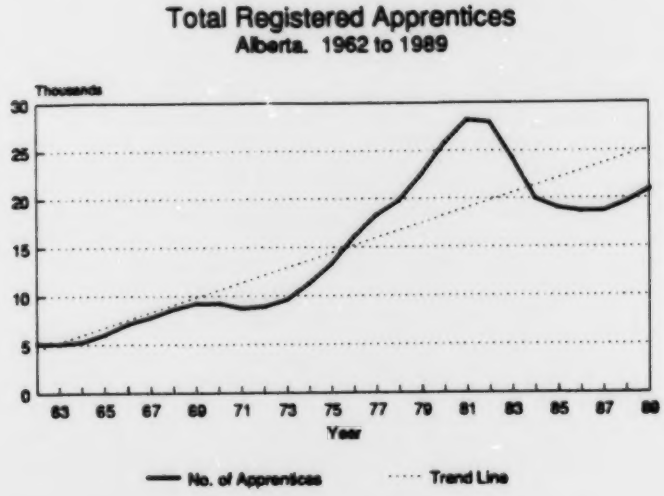
Chart #7



44. The total number of "apprentices registered" provides the best overall indication of the historical pattern of growth experienced by our system. As illustrated by chart #8, total registrations peaked in 1981 at over 28,000 and then began to decline. This decline correlates with Alberta's economic downturn in the early 80's. The subsequent economic recovery has resulted in another pattern of growth in apprentice registrations and further illustrates the close relationship between apprentice registrations and labour market demand. This relationship exists because each apprentice must be

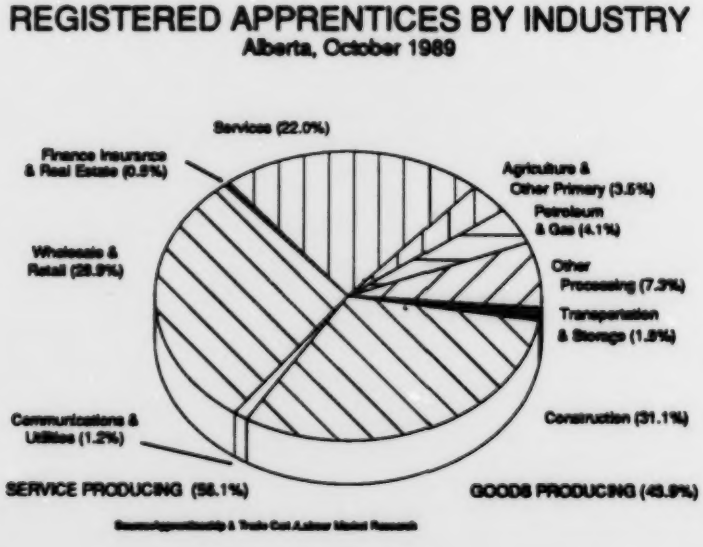
employed to enter into training and maintain registration. My main point here is that apprenticeship as a training system is responsive to the needs of the labour market.

Chart #8



45. The 53 trades designated in Alberta span most of industrial sectors operating in the province. Chart #9 illustrates the industrial sectors in which the 21,000 apprentices registered in the province in 1989, were working. Of this number you will note that 56% were employed in service industries. This represents a significant shift from the goods producing sector, where apprenticeship training historically took place. It may also be of interest to note that, of the 17 trades designated since 1976, 12 operate almost exclusively in the service producing sector of the economy.

Chart #9



46. Another important point which I would like to make about apprenticeship as a training system relates to the characteristics of the clientele it serves.

47. In Alberta we have noticed an interesting trend evolving with respect to the average age of apprentices. In the early 70's the average age of an apprentice was close to 22 years. It has since increased to near 27 years of age. This trend parallels the increase in median age in the Alberta population which, according to the chart we looked at earlier, was approximately 30 years of age in 1989. This appears to indicate that, unlike many traditional training systems, the apprenticeship system is responsive to demographic as well as economic changes.

48. Additionally, some interesting information was obtained from a recent analysis of employers in our province who employ tradespeople. We found that over 65% of the apprenticship training in Alberta is being done by small businesses employing less than 10 tradespeople.

49. These data showed that, in Alberta, apprenticeship is supported largely by small employers. These employers are linked together through a training infrastructure known as the "committee system". In Alberta over 850 tradespeople, representing both employers and employees, normally meet every 3-4 months as Local Apprenticeship Committees to discuss matters relating to apprenticeship training in their areas. This network of committees is supported by approximately 120 nominating organizations that represent employers and employees.

50. All Local Apprenticeship Committee members for a specific trade also meet regularly as a Provincial Apprenticeship Committee. This group works closely with trade specialists, technical advisors, and representatives from training establishments to provide a provincial perspective on matters relating to training programs, course content and trade regulations. Cross-trade coordination is addressed in Alberta by the Apprenticeship and Trade Certification Board .

51. The Apprenticeship Board is comprised of employer and employee representatives from a variety of industrial sectors as well as representatives of the general public. The Board functions in an advisory capacity to the Alberta government Minister responsible for apprenticeship. Through this system, industry is linked directly to government and the province's training establishments and provide ongoing input into the development and maintenance of training programs which are current and relevant to its needs.

52. I have provided you with this brief overview of Alberta's committee system to illustrate that apprenticeship, as a training system, can provide the necessary infrastructure to respond effectively to the unique demographic and industrial characteristics of the emerging labour market. I would like to move on now to describe some recent initiative undertaken by Alberta to expand and improve upon this system.

53. Due to the impact that rapid technological innovation was having on the trades, Alberta introduced The Journeyman Updating Program in 1984. The program is designed to enhance the skills and knowledge of Journeyman in areas of their trades most effected by technological change. Through the committee system, industry provides direct advice on course content as well as valuable feedback on the effectiveness of the training. Most courses are of 30 hour duration and are offered in a variety of flexible schedules including evenings, weekends, afternoons and block release.

54. Since the program was introduced, more than 14,000 Journeyman have attended updating courses in their respective trades. Today the program offers 180 courses in 34 trades. This program has not only helped Journeyman adapt to new technologies, but has been very valuable for instructors who benefit from having experienced tradespeople return to the classroom.

55. In recognition of the need to respond to those demographic trends occurring in Alberta which we discussed earlier, we established, in 1989, an Access Initiatives Branch within the Apprenticeship and Trade Certification system. The primary goals of this branch are to develop policies and programs which will promote the participation of women, Natives, recent immigrants, and persons with disabilities in our apprenticeship training programs. Some of the activities designed to achieve this goal are:

    1. Addressing the barriers which currently prevent individuals from acquiring employment in the trades;

    2. Promoting awareness of the trades as a career choice to those groups of individuals currently not participating in the trades;

    3. Developing bridging programs to facilitate access to the trades;

    4. Providing workshops to career advisors on trades and technologies, as well as on the designated groups; and

    5. Identifying and responding to the problems of apprentices who have special needs.

56. With respect to the issue of workforce mobility, Alberta has been actively promoting the interprovincial standardization of both training and certification. To this end, Alberta has strongly supported the initiatives of the "Canadian Council of Directors of Apprenticeship" (formerly known as ISPCC) and its goal to increase interprovincial mobility. Currently, Alberta participates in the "Red Seal Program" in 23 trades, enabling the majority of our certified Journeymen to compete in the national labour market. I believe this program to be an extremely important initiative relative to some of the emerging trends which we discussed earlier. I therefore encourage all those involved in apprenticeship training to support this committee and the Red Seal Program.

57. Another initiative aimed at improving interprovincial cooperation and communications is the recent establishment of the "Western Canada Alliance of Apprenticeship Board Chairmen". The Alliance provides a forum for discussing matters of regional interest, and if appropriate, make recommendations to provincial and federal governments on matters of mutual concern. Some of the initiatives the Alliance is pursuing include:

1. standardizing training and course curriculum to improve the mobility of apprentices;
2. centralizing low enrollment programs to ensure their viability and accessability;
3. sharing of training programs and facilities; and
4. developing new training methodologies.

58. This type of cooperation has led to the development of cost-effective training alternatives which are responsive to industry needs at the provincial, interprovincial and international levels. Alberta has provided technical training to apprentices and Journeyman from the Yukon and Northwest Territories for some time. Our sawfiler apprentices are all trained in British Columbia, and, we have entered into agreements with Saskatchewan, Manitoba, and British Columbia to provide apprenticeship training for industries outside Alberta where local training programs are not available.

59. An international apprenticeship training project has also been recently initiated with the Dugas Company in the State of Dubai, one of the seven United Arab Emirates. Currently six plant workers from Dubai have been registered as Alberta apprentices in three trades, and will receive their technical training in Alberta. Apprentices who meet completion requirements will be issued provincial certificates. Alberta anticipates training approximately 25 apprentices annually under

this project. The program has the potential of becoming the first in a series of international training initiatives designed to increase the standardization of training across international bounderies.

60. I am confident that these initiatives will, in the long term, result in a significant increase in workforce mobility and help provide the fuel necessary for continued economic growth. However, one only needs to pick up a newspaper to be reminded that an acute shortage of skilled workers continues to impact the economic growth in many regions of Canada. In Alberta for example, significant investments and initiatives in the forestry, oil and petrochemical sectors is creating a strong demand for workers in several skilled occupations, especially our designated trades. In order to meet these demands, we recently introduced two new initiatives designed to increase participation in the trades. These are the "Apprenticeship Work Experience Program" and the "Apprenticeship Awareness and Promotions Program". I'll take a few moments to explain what these programs entail.

61. The Apprenticeship Work Experience Program is designed to address potential skill shortages by creating training positions within provincial government departments in those trades where skill shortages are anticipated. With wage subsidization, participating government departments provide the necessary employment and supervised on-the-job training for new apprentices. Technical training is provided through our technical institutions. Upon successful completion of the required apprenticeship training, the qualified journeymen are released for employment within the private sector. Alberta estimates an expenditure of $2.2 million per year on this program which will create 100 new apprenticeship training positions each year.

62. The primary goal of the Apprenticeship Awareness and Promotions Program is to increase awareness of and participation in apprenticeship training generally, with a specific focus on those trades where skill shortages are anticipated. This is being accomplished through a direct promotions campaign aimed at employers who are likely to experience skill shortages; and, by increasing the awareness of the public through broad television, radio and newspaper promotion campaigns which develop a clearly defined, consistent image of the apprenticeship system. In the first 2 years of this program, Alberta will expend approximately $1.2 million to promote future growth in the trades. This strategy is in keeping with the desire to utilize apprenticeship training as an appropriate means to upgrade the skill level of the Alberta workforce.

63. Because I've covered so much ground already, I think it may be a good idea for me to review some of the points I've made in an effort to tie it all together before moving on to my last topic. I've identified several major economic/demographic trends, all of which are well documented and will likely have significant impacts on the labour market of the future. Clearly then, all those who have education and occupational training responsibilities need to consider the implications of these trends for their program areas and therefor face substantial challenges in developing appropriate and responsive training strategies.

64. I've identified for you those strategies and initiatives undertaken by Alberta Apprenticeship and Trade Certification in response to these emerging labour market needs. These responses include:

1. Mounting the Alberta Journeyman Updating Program - to update the skills of tradespeople who are effected by rapid technological change;

2. Establishment of the Access Initiatives Branch - to address barriers to, and promote participation of, minority groups including women, immigrants, Natives and handicapped persons in apprenticeship training;

3. Support and participation in the Interprovincial Red Seal Program - to promote interprovincial mobility and standardization;

4. Forming an Alliance of Apprenticeship Board Chairman - to achieve efficiencies by centralizing programs and sharing resources and ideas, and to improve mobility of apprentices;

5. Initiation of the Dubai Project - to assist in the development of training programs and the training of persons abroad, and to improve international mobility;

6. Establishment of the Apprenticeship Work Experience Program - to address acute skill shortages problems; and

7. Mounting of the Apprenticeship Awareness and Promotions Program - to address potential skill shortages in the trades and encourage greater use of our training system by promoting apprenticeship.

65. In addition to these, there are two specific observations that I have made about the effectiveness of apprenticeship as a training system:

1. ***Because employment is an inherent part of the training system, apprenticeship responds well to both short term industrial activity fluctuations and long term structural changes in the economy.*** This is evident in the Alberta system by both the rapidly increasing number of apprentices employed in the growing service producing sector of the economy, and the recent growth in apprenticeship numbers as economic activity increases.

2. *My second observation is that, through committee networks, apprenticeship as a training system can provide the necessary infrastructure to respond effectively to the unique demographic and industrial characteristics of the emerging labour market.* In Alberta this is evident in the increasing average age of apprentices, increasing level of female participation, and the number of small employers being served by the system.

66. These are only a few examples of how this system of training can effectively respond to emerging labour market conditions. In addition to responding directly and immediately to the training needs of industry, it allows both the employer and the apprentice to remain productive while training is occurring. It addresses the specific skill needs of the employer at the same time providing the individual apprentice with broad-based, generic training and certification recognizable by all employers in the industry.

67. It is my considered view, and the central theme of my presentation today, that occupational training in the wider sense would benefit considerably if it were based on the apprenticeship model. It is a proven training model which has clearly demonstrated responsiveness to industrial restructuring and economic growth. I feel strongly that this type of system can be expanded to play a more substantial role in providing training for emerging industries and new occupations.

68. In Alberta, new legislation is being considered which would provide a mandate for the development of a broader and more comprehensive industry-based training program centered on the apprenticeship model. This would enable rapidly growing industrial sectors such as petrochemical processing, forestry and tourisim sectors to access apprenticeship-like training. Such legislation would also provide an expanded role for industry in the operation of our training programs, and provide our current system greater flexibility to meet increasingly divergent needs of industry.

Innovative Approaches to the Delivery of Training

69. Greater flexibility in programming is in my view the most important component of any training strategy attempting to meet current and future labour market needs. Mounting new approaches to training and delivery of programs is paramount to the nations success. Apprenticeship is a proven training system which by and large has been delivered via a traditional format. If we are to achieve an expansion of the apprenticeship model we must examine the design of our training delivery systems and ensure they are responsive to a wider variety of occupational and industry specific employment conditions.

70. The traditional "block release" system of delivery may not be appropriate for many emerging industries and new occupations, especially those in the service producing sector of the economy. Alternate delivery mechanisms such as competency based training, distance learning, day release, modular instruction and computer based training should be readily available to meet the needs of new occupations. What may be impractical for an automotive mechanic may very well be the ideal method of training a bank teller or hotel clerk. We need to evaluate our current delivery format in light of emerging needs and identify appropriate alternatives.

71. In recognition of the need to develop innovative delivery systems, Alberta is currently piloting a Competency Based Apprenticeship Training project which we call C.B.A.T. To evaluate the effectiveness of competency-based, vis-a-vis time-based technical training for our apprentices, it was implemented on a pilot basis in three trades at four training establishments. The project is now entering the third year of operation and has received positive response and support from apprentices, employers and most instructors. Yearly formative evaluations guide its current operation. A summative evaluation of the project will be completed after all four years of training have been implemented in 1992. Many of the stakeholders in apprenticeship have already expressed an interest in having the project expanded to other trades.

Some of the main features of C.B.A.T., which make it different from the traditional approach are:

1. Individualized Learning with features such as:

   - a modular approach to standard industry-approved curriculum
   - the material is learned individually or in small groups
   - competence in each module must be demonstrated before proceeding
   - there is more opportunity for individualized instruction and access to learning
   - more responsibility for individual learning lies with the apprentice.

2. Self-Paced Progress which allows:

   - apprentices to proceed at different rates based upon previous knowledge and experience
   - apprentices to complete familiar material quickly, and concentrate on areas which are less familiar

- apprentices' progress to be monitored by computer for record keeping and marking of tests.

3. Open Exit, which allows:

   - apprentices to write the standard provincial examination and return to work when all modules are completed.

72. Another innovative approach to delivery of training was successfully used in Alberta during the economic boom periods of the late seventies. This program, referred to as "Fifth Shifting" was implemented to meet the special training needs of Syncrude, a large oil extraction firm located in northern Alberta. This firm found it difficult to schedule their large number of apprentices within the constraints of the traditional apprenticeship eight week block release system. Apprenticeship and Trade Certification entered into a cooperative arrangement with Keyano, a local community college, to meet Syncrude's concerns.

    The main features of this arrangement were:

    1. training was delivered at the Syncrude work-site by instructors from Keyano College;
    2. apprentices attended a one week class once every fifth week;
    3. provincial exams were administered upon completion of the standard course work for that level of training - usually after 40 weeks;
    4. the employer and apprentices benefited from training which utilized equipment and machinery most relevant to their jobs; and
    5. employers benefited by being able to schedule their apprentices around normal shift rotations.

73. C.B.A.T. and Fifth Shifting are two examples of innovative approaches to the delivery of technical training which have been used successfully in Alberta. Other alternatives currently being examined as potential solutions for employers and apprentices who find it difficult to access training delivered in the traditional format include Day Release and Modular Training.

74. These examples of alternate delivery systems constitute only a part of the attention currently being focused on the development of flexible and innovative programming. We are also working on an initiative which may make the services of a computerized exam item banking system available to training institutions across Canada in the near future. Under the direction of the Canadian Counsel of Directors of Apprenticeship, a national sub-committee developed, and successfully piloted, a system which is known as the Interprovincial Computerized Examination Management System (ICEMS).

75. This system not only has the capacity to provide comprehensive testing and item analysis services; but, also the capability of determining common content between trades and occupations. This capability will provide an accurate system for granting credits across trades and training jurisdictions and help move us closer to achieving our goals in these areas.

76. The development of ICEMS is important as an example of a successful cooperative venture between various levels of government and provincial jurisdiction. It is also important because it illustrates that apprenticeship, at both a provincial and national level, is a training system which adapts quickly to the latest changes in the training and educational technology fields.

Concluding Remarks

77. I hope that I have been successful in illustrating that apprenticeship or apprenticeship-like occupational training is not only a viable, but also an ideal training system for meeting the emerging demands of the labour market in the decades ahead. I believe that it is precisely those elements which have sustained its existence in the past which make it so suitable to the training demands of the future.

78. However, this is not to say that we should be complacent, as a rapidly changing labour market environment challenges us to keep the system in tune with the needs of industry. If industry is the party that we purport to serve, industry itself must be more directly and actively involved in, and take responsibility for, the business of training. The roles and responsibilities of all the partners need to be determined, assessed, and clarified in order to prepare us to meet the challenges of the 90's and beyond.

79 I have provided you an overview of what I believe these challenges to be. This includes the challenge of developing a nation wide "training culture" and supporting training strategies which will ensure the development of our most valuable assets, our human resouces. The CVA and its membership can play an important role in meeting these challenges by continuing to encourage the promotion, development and delivery of quality occupation-oriented education and relevant industrial training programs designed to meet the rapidly changing needs of industry. This committment will evolve a training culture "focused on lifelong learning"

80. At this time I will entertain any questions you may have.

Thank you.

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